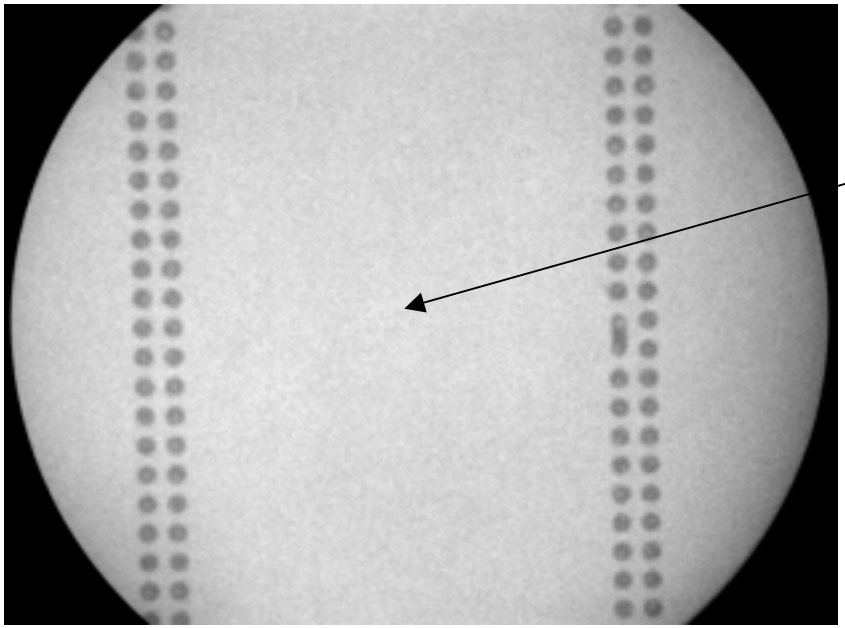
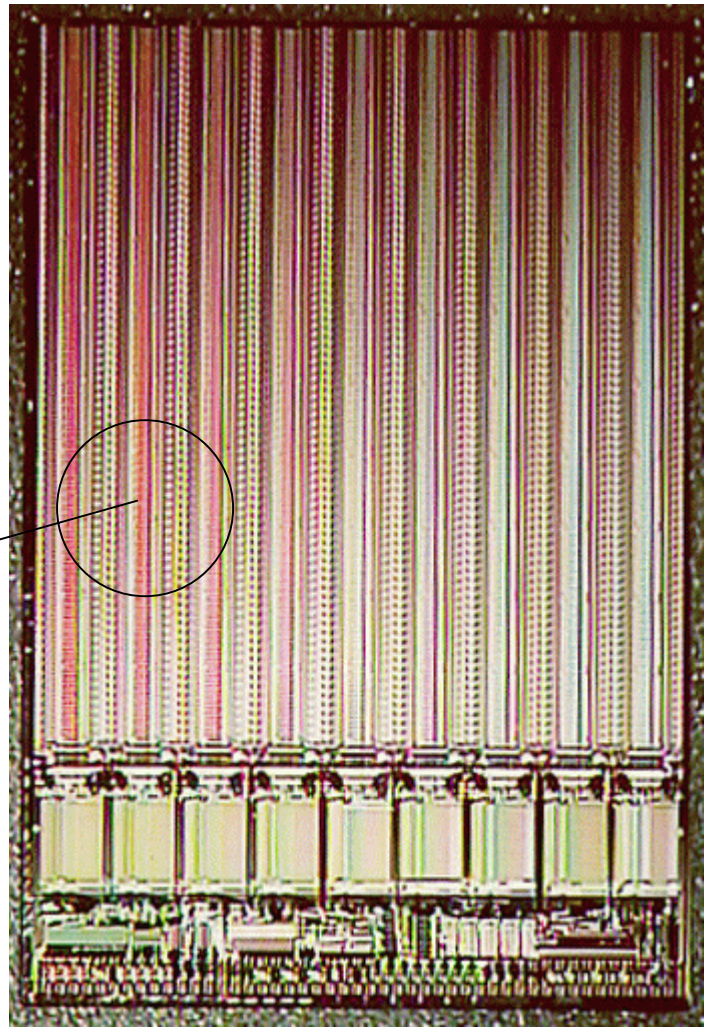
Berkeley Lab Bump Needs

- IC wafers are 6”
- Die size is about 7.4 x 11 mm^2
- Area array with about 2900 bumps per die
- Substrate material is silicon
- Substrate wafers are 4” of 250-300 micron thickness
- Receiving metal must be also put on substrate wafers for flip chip
- Passivation is silicon nitride
- Typical passivation opening is about 12 micron diameter.
- Center-to-center bump spacing is 50 microns.
- Bump height tolerance is not critical
- Contact is M. Gilchriese at 510-486-6790 or gilg@sts.lbl.gov

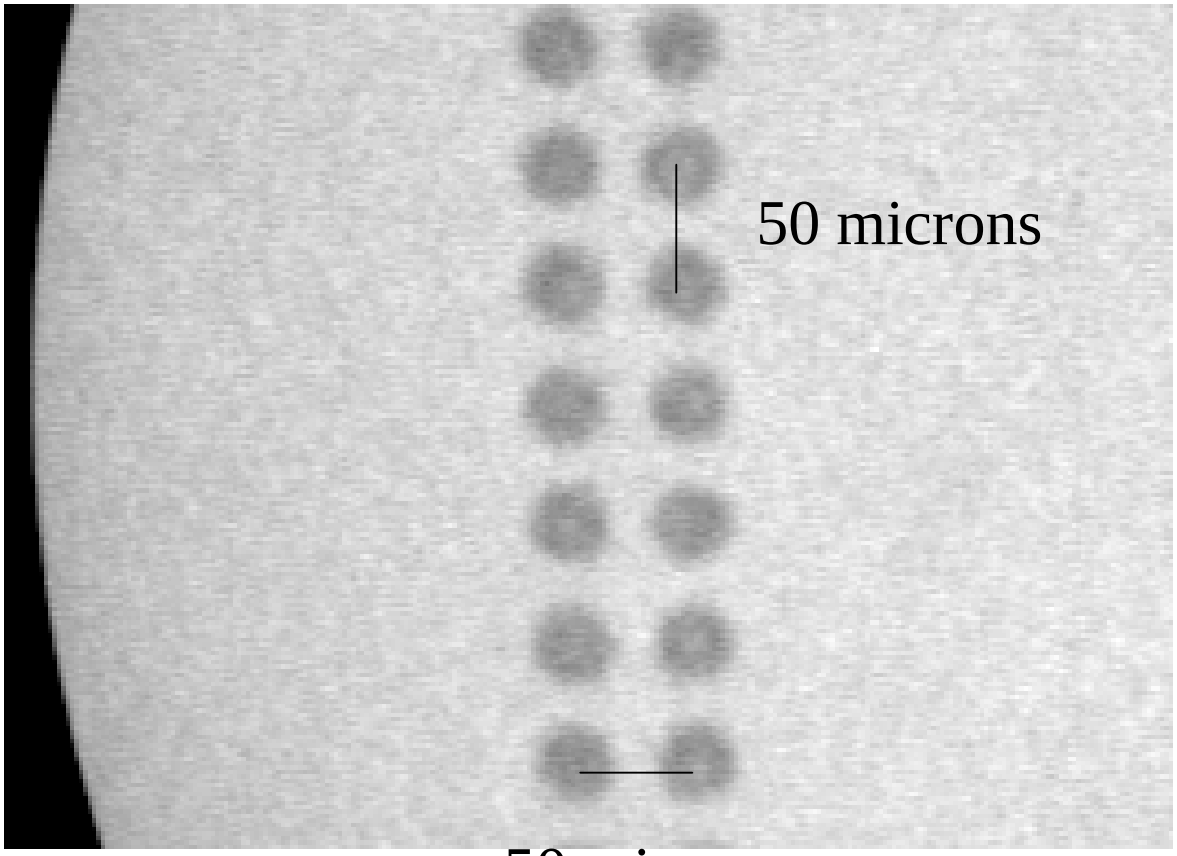
IC

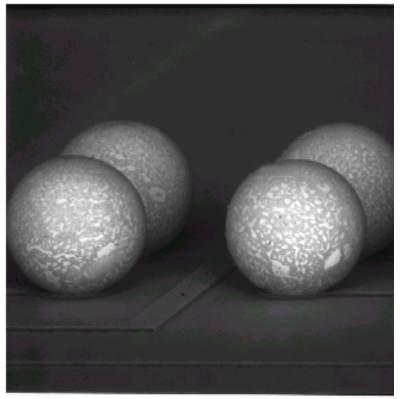
X-ray of bumps





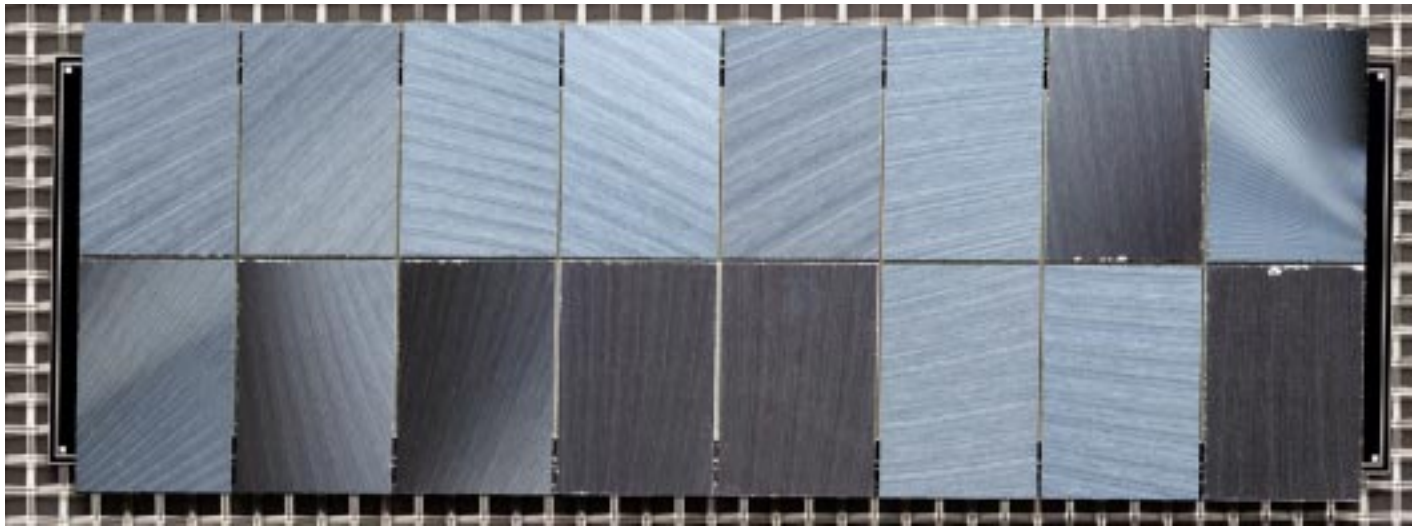
Solder Bumps





Flip Chip Assembly

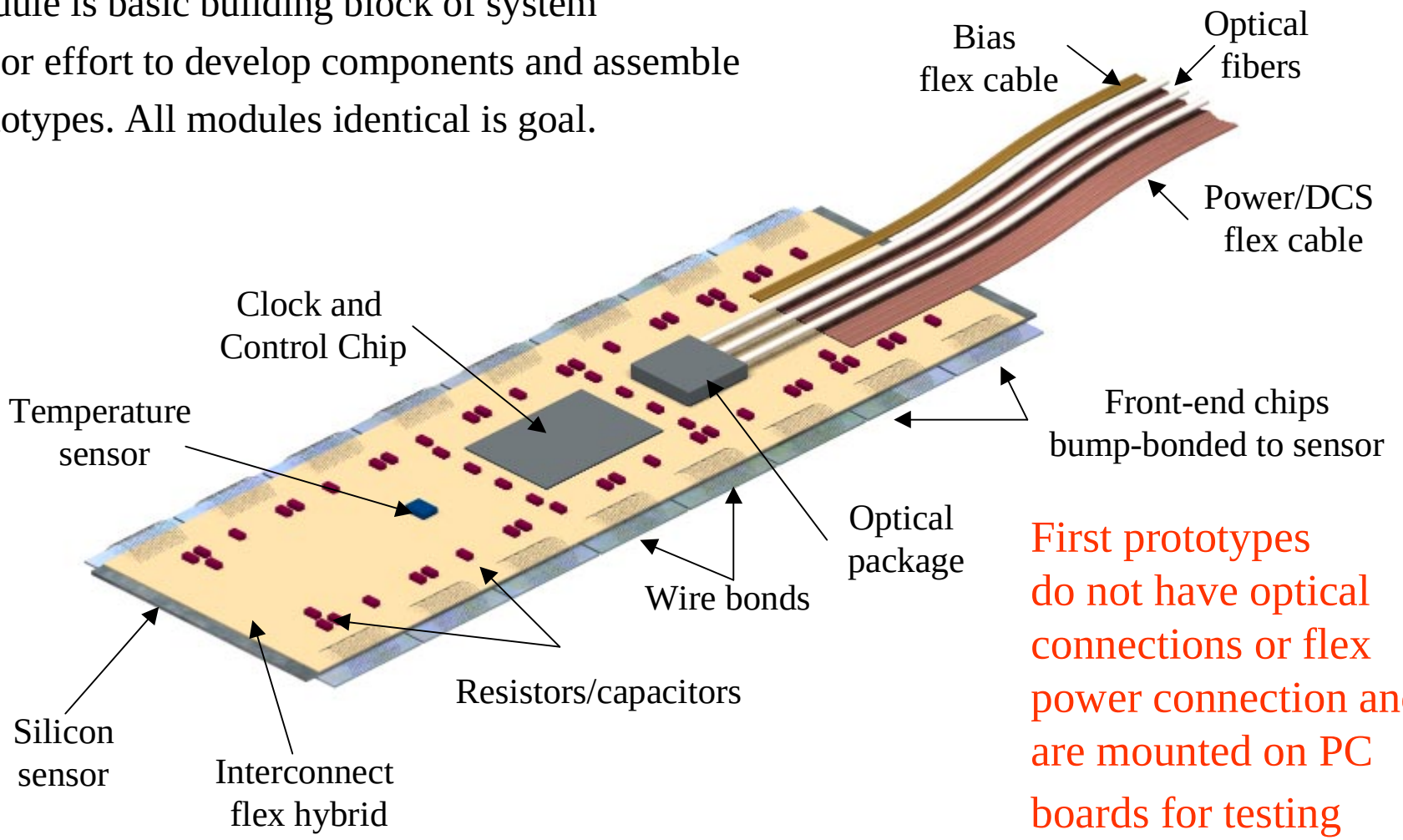
16 chips bonded to silicon substrate



Pixel Module

Module is basic building block of system

Major effort to develop components and assemble prototypes. All modules identical is goal.



First prototypes do not have optical connections or flex power connection and are mounted on PC boards for testing

Quantity and Schedule

- Quantity
  - Need about 2000 good modules. Hope this means starting about 3000.
  - 1/3 to 1/2 production is possible
- Schedule
  - Development — now - July 2000
  - Preproduction — July - December 2000
  - Production — 2001 - mid 2002(rate is limited by delivery of parts)